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ABSTRACT

Head Start children tested at 4 years of age on the Preschool Preposition Test (PPT) and the Classroom Behavior Description checklist (CBD) were assessed for academic achievement and scholastic aptitude at the third- and eighth-grade levels. The PPT is a receptive language test which examines the comprehension of verbal directions by using spatial prepositions or related locative terms together with objects. The CBD, developed as a companion measure to the PPT in order to explore the relationship of social skills to cognitive ability, is a 10-item checklist on which a teacher evaluates a child's ability; classroom adjustment; and several social, emotional, and task-oriented characteristics considered likely to influence classroom competence. Scores were obtained for 44 subjects at the third-grade level on the Cognitive Abilities Test and the Iowa Tests of Basic Skills. Scores of a subsample of children at the eighth-grade level on the California Achievement Test were also obtained. Differences in achievement test scores earned by boys and girls, as well as the sex differences in both PPT and CBD correlations with eighth-grade achievement, with third-grade achievement, with scholastic aptitude test scores, and with later special education placement are discussed. (RH)

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TITLE: PRESCHOOL PREPOSITION TEST AND CLASSROOM BEHAVIOR DESCRIPTION: EIGHTH GRADE FOLLOW-UP OF HEAD START PROGRAM

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ABSTRACT

A ten-year follow-up study of Head Start children tested at age four on the Preschool Preposition Test and the Classroom Behavior Description produced striking findings in regard to sex differences in academic predictions. The PPT Head Start scores correlated strongly with eighth grade achievement test scores for girls, but not boys. As the PPT's predictive ability for the dirls has demonstrated credibility, we hypothesize that factors extrinsic to the PPT have caused the marked sex differences.

For girls, correlations between the Head Start CBD ratings and third and eighth grade achievement test scores were strongest for CBD items measuring prosocial classroom behavior. Correlations for boys, however, were strongest for items measuring independence and somewhat disruptive behavior. Moreover, boys' eighth grade achievement test scores were significantly lower than those of the girls ($p. < .05$). Dysfunctional interactions with upper-middle-class oriented teachers could have resulted in depressed achievement test scores for at least some of these lower-class boys, causing low correlations between the PPT scores, representing their true ability, and later achievement test scores. Perhaps greater attention should be paid to maintaining early manifested competencies in high risk populations to prevent future deterioration of performance.

PRESCHOOL PREPOSITION TEST AND CLASSROOM BEHAVIOR DESCRIPTION: EIGHTH GRADE FOLLOW-UP OF HEAD START PROGRAM

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This paper reports and evaluates the findings of a ten year follow-up study of Head Start children who were tested at four years of age on the Preschool Preposition Test (PPT) (Aaronson, 1968) and the Classroom Behavior Description (CBD) (Aaronson, Phillips, Bertolucci & Aaronson, 1979b).

The PPT and the CBD are both rapid, simple screening instruments. The PPT is a receptive language test of prepositions and related locative terms which aids in the early identification of preschool children who may be at high risk for cognitive delay. The CBD is a check list for collecting teachers' ratings of classroom behaviors that are likely to influence school performance.

The most striking findings were in regard to sex differences in academic predictions. The PPT scores obtained at age four in Head Start correlated strongly with eighth grade achievement test scores for the girls, while for the boys, the correlations were insignificant. Since data from this and other studies strongly indicate that the PPT's predictive ability for girls is not an artifact, we hypothesize that factors extrinsic to the PPT have caused the marked sex differences.

Background

The PPT was developed for use in the Infant Education Research Project, an early cognitive intervention program for children ages fifteen months to three years (Schaefer & Aaronson, 1977). Its development was based on Bayley's analysis of the Berkeley Growth Study data which indicated that knowledge of prepositions correlated with verbal and spatial abilities in the early years (Bayley, Note 1). Later, others working with the same data (McCall, Eichorn & Hogarty, 1977) found that knowledge of a few prepositions at 27 to 30 months correlated with IQ scores at six to 36 years of age.

Researchers have related locative prepositions to some aspect of spatial relations. One definition of spatial relations which has been thus advanced is the comprehension of the arrangement of elements within a visual stimulus pattern (Guildford & Lacey, 1947; Guildford & Zimmerman, 1947). This definition aptly describes the discriminative process demanded of children by the PPT items. They must comprehend the arrangement of elements presented in their visual field before making a proper placement in response to a PPT item. According to Piaget, children do not fully comprehend spatial prepositions until they are six or seven years old. More likely, verbal directions (such as those used in the PPT) generate in the child sensorimotor activity and perceptual discriminations which are precursors to comprehension of spatial concepts (Gruber & Voneche, 1977). Miller and Johnson-Laird (1976) review research concerning prepositions and other spatial locatives and they too point out their complexity, both cognitively and grammatically.

There are many studies which tend to support the PPT's impressive past results in evaluating a preschooler's mental abilities and also the present indications of its predictive powers over a ten year period as reported in the results section of this paper. McGee (1979) reviews numerous psychometric

studies in the area of human spatial abilities which have long range predictive powers. He points out that variations in spatial test scores are influenced by environmental, genetic, hormonal, and neurological factors. There is a large body of literature on the long range predictive powers of spatial tests, especially for boys, in mathematics and science (Bennett, Seashore & Wesman, 1974; Guilford & Lacey, 1947; Holliday, 1943; Holzinger & Swineford, 1946; Hunt, 1973; Hunter, 1945; Karlins et al., 1969; Knight, 1949; Martin, 1951; Oxlade, 1951; Shuttleworth, 1942; Slater, 1941; Smith, 1948, 1964).

The CBD was developed as a companion measure to the PPT to explore the relationship of social skills to cognitive ability (Aaronson, Phillips, Bertolucci & Aaronson, 1979b). Its development was based on a series of comprehensive and detailed classroom and home behavior inventories in which many discrete observable behaviors were rated (Schaefer & Aaronson, 1973; Schaefer, Aaronson & Burgoon, 1971; Schaefer, Aaronson & Small, 1973; Schaefer, Droppleman & Kalverboer, 1965).

METHOD

Subjects

The eighth grade follow-up sample (N=37) is made up of those students who have remained in the same Maryland county school system since Head Start, whose parents were willing to give permission for the examination and reporting of their children's test records. Six of the students had no achievement test scores because of placement in special education classes. The eighth graders had been part of a testing program conducted ten years earlier in which a total of 118 children of mixed races were tested.

An earlier follow-up study was conducted when the children from the same Head Start sample reached the third grade (Aaronson, et al, 1979b). At that time 54 subjects were located, 10 of whom were in special education classes and not included in the school system's testing program. Only 22 of the eighth

grade sample were also in the third grade sample.

Measures

The PPT is a receptive language test which examines the comprehension of verbal directions using spatial prepositions or related locative terms together with objects. The equipment consists of a metal board having a colorful picture of a boy and a car slightly raised from the background, and a red magnetized halved rubber ball. The board is placed in an upright position in front of the child. The examiner hands the ball to the child and reads aloud 23 items in turn; for example, "Put the ball into the boy's hands," "Put the ball in back of the car." The ball adheres to the pictureboard at the point of placement, and this placement is recorded. Percentile norms by age are available based on tests of 1,292 subjects from many areas of the United States. Validity and reliability data are reported elsewhere (Aaronson, M., 1968; Aaronson & Phillips, 1977; Aaronson, Phillips, Bertolucci & Aaronson, 1978, 1979a, 1979b, 1980).

As noted earlier, the CBD was developed as a companion measure to the PPT to explore the relationship of social skills to cognitive ability. It is a very brief (10-item) checklist on which a teacher describes her judgment of the child's ability, classroom adjustment, and several social, emotional and task-oriented characteristics considered likely to influence classroom competence. Examples of CBD items are "Gregarious & Verbally Expressive" and "Able in Comprehension and Problem-Solving." The teacher marks the category which most closely describes the child's behavior, Very Much Like, Somewhat Like, Very Little Like, or Not at All Like. Validity and reliability data are strong and are reported elsewhere (Aaronson & Phillips, 1977; Aaronson, Phillips, Bertolucci & Aaronson, 1978, 1979b, 1980).

At the third grade level, scores were obtained for 44 subjects (Boys=19, Girls=25) on the Cognitive Abilities Test (Thorndike & Hagen, 1971) and the Iowa Tests of Basic Skills (ITBS) (Hieronymus & Lindquist, 1971). The Cognitive Abilities Test, an aptitude test, provides no total score but yields separate subtest scores in Verbal, Quantitative, and Non-verbal areas. The ITBS, an achievement test, yields a total battery score and major subscores in Vocabulary, Reading Comprehension, Language Skills, Work-study Skills and Mathematics Skills.

Eighth grade scores were obtained on the California Achievement Test (CAT) (CTB/McGraw-Hill, 1979) for 31 subjects (Boys=14, Girls=17). The CAT is a battery with 11 subscores, which make up summary scores in Reading, Language, Mathematics, and Reference Skills, and an overall total score.

Representativeness of Eighth Grade Sample

Because our eighth grade sample is relatively small, we present evidence of its comparability to the original Head Start sample of 118 from which it was drawn. These data are in Table 1, For each sex separately, we compared the eighth grade sample (N=37) with the remainder of their Head Start cohort (N=81) and no significant differences were found for mean age, PPT score or CBD behavior ratings. Where differences exist, they are negligible in size and reveal no directional trends. Moreover, when the eighth grade sample was in Head Start the distribution of their PPT scores by age did not differ from that of the entire PPT normative sample. Compared to the national norm of 16, the eighth grade boys had a mean of 16, the girls, 15.

RESULTS

In this section we report the differences in achievement test scores earned by boys and girls, as well as the sex differences in both PPT and CBD correlations with eighth grade achievement, with third grade achievement, and with scholastic aptitude test scores. Additionally, we note the relationship between early PPT and CBD scores and later placement in special education classes.

Sex Differences in Achievement Test Scores

There are remarkable sex differences for our eighth grade sample not only for CAT correlations with the PPT but also for the CAT scores themselves (see Table 2). On the national norms for the CAT, the girls in our sample obtained a mean percentile rank of 52, slightly above the national mean. The boys' mean percentile rank, however, was only 32. Moreover, the girls' mean percentile score was higher than the boys' on every subtest. For the total battery score and for four of the subtests, the difference reached statistical significance, $p < .05$ (Table 2). The same pattern was found in the third grade aptitude and achievement test scores. The girls' mean score was higher than the boys' for the total score and on every subtest.

Sex Differences in PPT Correlations

1. PPT Correlations with Eighth Grade CAT Scores. Strong differences emerge in correlations of the Head Start PPT scores with eighth grade achievement test scores (see Table 3). For the girls (N=17) the PPT correlated significantly with the eighth grade total CAT score and with each of the major CAT subtest scores of Reading, Language, and Mathematics, many of the correlations in the .60s and .70s. For the boys (N=14) none of the correlations were significant and many were negative.

2. PPT Correlations with Third Grade Test Scores. For 22 of our eighth-grade subjects we have third-grade data from an earlier follow-up study in which data were collected on a total of 44 children. In that study scores were obtained on the Cognitive Abilities Test and the Iowa Tests of Basic Skills (ITBS). Full results of this study are reported elsewhere (Aaronson, et al, 1978, 1979b). Table 4 shows the correlations separately by sex, of the PPT with the third grade test scores for the 22 eighth graders and also for the total third grade sample which includes them. In general, correlations for the subsample of children with eighth grade scores are comparable to those for the entire third grade sample. Sex differences are very clear in these correlations for both the total sample and the subsample: for the girls, all correlations are positive and more than half reach significance, while for the boys only one reaches significance for the total sample, none for the subsample, and many are negative.

3. PPT Scores and Special Education Placement. Three boys and three girls in our eighth grade sample had been assigned to special education classes because of serious cognitive or behavior problems and were not tested on achievement. When in Head Start, there were no sex differences in their PPT scores. For both sexes, the mean PPT scores placed them at the ninth percentile of the PPT normative sample. At age four, it was already apparent from their low PPT scores that they were in need of diagnosis and special assistance.

Sex Differences in CBD Correlations

We examined the teachers' Head Start behavior ratings for possible clues to reasons for the sex differences in academic performance reflected in the school achievement and aptitude test scores. We correlated the CBD ratings with both the eighth grade CAT scores and the third grade Cognitive Abilities

and ITBS scores. Also, we examined the CBD ratings for the boys and girls in special education classes.

1. CBD Correlations with Eighth Grade CAT Scores. The correlations of Head Start CBD ratings with the eighth grade CAT scores reveal extremely divergent patterns for the two sexes (Table 5). For the girls, almost all of the behavior traits considered pro-social have positive correlations with the achievement test scores and most of the anti-social traits have negative correlations; many of these correlations reach significance. The pattern for the boys is very different. Significant correlations were obtained only with Self-Reliant & Self-Sufficient and with its polar opposite, Dependent (and in one case with the rating of Ability). Otherwise, correlation patterns for the boys are opposite to those for the girls: most of the correlations of the pro-social traits with eighth grade achievement tests are negative, while those with anti-social traits are positive.

2. CBD Correlations with Third Grade Test Scores. For the total third grade sample, the correlation patterns of Head Start CBD ratings with the Cognitive Abilities Tests and the ITBS were not markedly divergent between the two sexes (Table 6). Although the correlations were higher in value for the girls, for both sexes correlations with third grade test scores tended to be positive with pro-social behaviors and negative with anti-social behaviors. The exceptions to this pattern, however, seem to anticipate the eighth grade data: for the boys, the CAT Non-Verbal Ability test scores correlated positively with Belligerent & Irritable and Distractible & Hyperactive, and negatively with Considerate, Attentive, Conforming, and Well-Adjusted.

DISCUSSION

It is remarkable that the PPT was able to predict eighth grade achievement test scores with many correlations in the .60s and .70s for girls ten years after the test was administered. However, given this accomplishment, we are puzzled that the findings are sex selective. Hence we have searched for an explanation as to why its predictive powers did not extend equally to boys.

The PPT has no past history of sex bias. Previous PPT studies on almost 1,000 children show only the most negligible differences in PPT scores by sex, with no directional trend favoring one sex over the other (Aaronson & Phillips, 1977). In studies already referred to in this report the PPT has shown concurrent validity, predictive validity to third grade, and reliability for both sexes (Aaronson, et al, 1979a, 1979b, 1980). Additionally, there is a large body of literature supporting the long range predictive powers of other psychometric tests involving spatial relations, <u>especially for boys</u>. They are referenced on page 3 of this report.

No sex differences were found in the original Head Start data from which this sample was drawn. In Head Start the boys' abilities and classroom behavior did not differ from those of the girls, according to PPT and CBD scores; and the abilities of both sexes were about average when compared to the PPT national norms.

The sex differences in our findings do not appear to be an artifact due to the small sample size. We presented data earlier in this report and in Table 1 attesting the comparability of our eighth grade sample to the original larger Head Start sample from which it was drawn.

Sex differences in correlations between the PPT and scholastic achievement began to emerge in our third grade Head Start follow-up study. Correlations were stronger for girls than for boys. However, the PPT was able to predict third grade achievement test scores in mathematical concepts for boys.

At the eighth grade level, not only have all significant correlations for boys of the PPT with achievement test scores disappeared, but also the achievement test scores themselves show great divergence between the sexes. The girls achieved a mean CAT percentile score of 52 compared to the boys' .32, a statistically significant difference ($p < .05$). As can be seen, the girls' score was about average compared to the CAT national norms, whereas the boys placed in the lowest third of percentile scores. It is not unusual for girls to score somewhat better than boys on public school achievement tests, but not to the extent of the difference reaching statistical significance. A factor that should be considered here is that, although the girls' performance was about equal to the national CAT mean, it was well below that of the students in their own school system, who achieved mean percentile scores on the CAT of 79 and 75 for girls and boys respectively. The high achievement test scores were no doubt related to the fact that the population of the county that administers the school system has one of the highest per capita incomes in the United States. As is often the case in areas where the parents are affluent and have high levels of education, the children were performing well above the average for the nation. By contrast, our Head Start sample came mostly from low socioeconomic status families, many of whom were on welfare.

The results of a number of studies strongly suggest that being lower class in a predominantly affluent school system can cause children to perform below their abilities; and that boys tend to be more greatly affected than girls (e.g., Bruner & Caron, 1959; Donaldson, 1968, 1969; Feldhusen, Thurston & Benning, 1967; Felsenthal, 1971; Ginsburg, 1981; Holland, 1974; Jackson & Lanaderne, 1967; Pierce, 1960; Seward & Seward. 1980; Swift & Spivack, 1968; Warner, Note 2). Low SES boys are said to have greater difficulty than girls

in conforming to the expectations of the mostly female, middle-class-oriented teachers. The boys are frequently perceived as disturbing and disruptive to the class, aggressive, and independent. At times their teachers equate anti-social behavior with low intelligence. Then, as a self-fulfilling prophecy, the teachers' low expectations and social disapproval lead to lower achievement on the part of the student (Feldhusen, Thurston & Benning, 1967). Although in Head Start there were no sex differences in teachers' CBD ratings, later correlations in both the third and eighth grade disclose that the girls who became strong achievers were the ones who in Head Start had the most conforming, well-adjusted classroom behavior. They no doubt learned how to please the teacher and adjust to the upper-middle-class environment. However, results of the same correlations for the boys are somewhat unclear and inconsistent. In general, the strong achievers among the boys were seen in Head Start as strongly independent, having some behaviors which tend to be disruptive and anti-social.

CONCLUSIONS

Any generalizations drawn from this study must be tentative and would depend on further research for substantiation. At this point, strong positive correlations between PPT preschool scores and eighth grade achievement test scores for girls and not for boys do not give sufficient reason to consider that some inherent bias in the structure of the PPT is responsible for the unequal findings. Rather, given the PPT's demonstrated lack of sex bias heretofore, the implications are that the PPT has equally strong predictive powers for both girls and boys, given equal stability of classroom experience for the sexes. We must take into consideration that in this study correlations between the girls' classroom behavior ratings and their test performace scores

showed a fair amount of stability through the years and the boys' did not. The findings point to the fact that the correlations between boys' behavior and school achievement became inconsistent and unstable through time. The most probable reasons advanced here, and substantiated by other studies, are that in this upper-middle-class school system faulty teacher-student expectations and interactions developed between middle-class oriented teachers and lower-class boys, but not girls. Perhaps it is not enough to identify and help those preschool children whose cognitive development already shows signs of being delayed. It may be equally important to support those high risk children who are coping well in order to maintain their demonstrated abilities and prevent future deterioration of performance.

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TABLE 1

COMPARABILITY OF EIGHTH GRADE SAMPLE WITH REMAINDER OF HEAD START GROUP BY SEX FOR MEAN AGE, PPT AND CBD SCORE

	GIRLS		BOYS	
	8th Grade Sample	Remainder of Head Start Sample	8th Grade Sample	Remainder of Head Start Sample
Number of Subjects	20	36	17	45
Age in Months	52.0	51.8	52.4	52.9
PPT Mean Score	15.4	15.2	15.5	16.0
CBD ITEMS				
Considerate & Kind	3.6	3.5	3.1	3.1
Distractible & Hyperactive	1.8	1.7	2.2	2.1
Conforming & Obedient	3.6	3.5	2.9	3.0
Attentive & Persevering	3.5	3.2	2.9	2.9
Gregarious & Verbally Expressive	2.6	2.9	3.1	2.9
Belligerent & Irritable	1.5	1.2	1.8	1.7
Withdrawn & Solitary	2.0	1.9	1.4	1.7
Self-Reliant & Self-Sufficient	3.2	3.3	3.2	3.1
Dependent, Wants Help Constantly	2.0	1.9	1.7	1.9
Able in Comprehension and Problem-Solving	3.2	3.0	3.1	3.0
Well Adjusted	3.2	3.1	3.1	2.8

Note: There are no significant differences between the eighth grade sample and the remainder of their Head Start Cohort.

The PPT is composed of 23 items; the highest score attainable is 23.

The CBD items are rated on a four-point scale, from Not At All Like (1 point) to Very Much Like (4 points).

Table 2

SEX DIFFERENCES ON EIGHTH GRADE CALIFORNIA ACHIEVEMENT TEST
FOR HEAD START FOLLOW-UP SAMPLE

CAT SCORES	Girls N=17	Boys N=14	Signif. of Difference
Total Battery	52.3	32.3	.05
Reading Total	46.2	35.9	*
Reading Vocabulary	41.8	30.5	*
Reading Comprehension	50.0	39.9	*
Language Total	55.9	32.0	.02
Spelling	55.8	24.8	.01
Language Mechanics	62.4	40.0	.04
Language Expressive	49.0	29.9	.05
Mathematics Total	52.9	38.0	.10
Math Comprehensive	50.2	34.5	.07
Math Concepts	54.2	41.8	*
Reference Skills	63.9	47.6	.08

* > .10

Table 3

PRESCHOOL PREPOSITION TEST SCORES CORRELATED WITH EIGHTH GRADE CALIFORNIA ACHIEVEMENT TEST SCORES

CAT SCORES	Girls N=17	Boys N=14
Total Battery	.61**	-.11
Reading Total	.52*	-.07
Reading Vocabulary	.50*	-.18
Reading Comprehension	.49*	-.02
Language Total	.49*	-.24
Spelling	.28	.23
Language Mechanics	.61**	.17
Language Expression	.40	-.45
Mathematics Total	.75**	-.03
Math Comprehension	.63**	-.06
Math Concepts	.75**	-.02
Reference Skills	.26	.15

*p < .05
**p < .005

Table 4

PRESCHOOL PREPOSITION TEST SCORES CORRELATED WITH THIRD GRADE COGNITIVE ABILITIES TESTS AND IOWA TESTS OF BASIC SKILLS

Third Grade Tests:	GIRLS		BOYS	
	Sample from 8th Gr Study N=13	Full 3rd Gr Sample N=25	Sample from 8th Gr Study N=9	Full 3rd Gr Sample N=19
Cognitive Abilities Tests				
Verbal	.45	.41*	-.26	-.14
Quantitative	.59*	.40*	.06	.36
Non-Verbal	.39	.45*	-.01	.31
Iowa Tests of Basic Skills				
Total Battery Score	.58*	.51***	-.06	.23
I. Vocabulary	.60*	.51***	-.02	-.09
II. Reading Comprehensive	.53*	.48**	.13	.00
III. Language Skills				
A. Spelling	.44	.26	.14	.21
B. Capitalization	.37	.33	.00	-.06
C. Punctuation	.58*	.29	.08	-.06
D. Usage	.23	.23	-.01	.00
IV. Work Study Skills				
A. Map Reading	.38	.46**	-.04	.10
B. Graphs	.51*	.47**	-.01	.20
C. Reference Use	.46	.38*	-.48	.17
V. Mathematical Skills				
A. Math Concepts	.67**	.33	.17	.47*
B. Problem Solving	.55*	.32	.17	.19

*p < .05
**p < .01
***p < .005

Table 5

HEAD START CLASSROOM BEHAVIOR DESCRIPTION RATINGS CORRELATED WITH MAJOR EIGHTH GRADE CALIFORNIA ACHIEVEMENT TEST SCORES

CBD Item	Total CAT		Reading		Language		Mathematics	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Well Adjusted	.60**	-.21	.42*	-.31	.57**	-.11	.55*	-.21
Gregarious & Verbally Expressive	.57**	.13	.55*	.27	.63***	.29	.52*	-.03
Considerate & Kind	.41*	-.21	.27	-.33	.40	-.16	.40	-.19
Self-Reliant & Self-Sufficient	.30	.54*	.14	.55*	.25	.45	.43*	.49*
Able in Comprehension & Problem Solving	.29	.38	.18	.46*	.44	.40	.22	.28
Attentive & Persevering	.26	-.17	.05	-.28	.21	-.17	.14	-.14
Conforming & Obedient	.16	-.11	-.08	-.36	.17	-.07	.12	.00
Dependent, Wants Help Constantly	.06	-.54*	.21	-.47*	.09	-.51*	.18	-.53*
Distractible & Hyperactive	-.11	.24	-.02	.38	.07	.16	-.05	.20
Belligerent & Irritable	-.22	.32	.07	.48*	-.17	.32	-.29	.28
Withdrawn & Solitary	-.60**	.16	-.48*	-.08	-.67***	-.02	-.64***	.39

*p < .05
**p < .01
***p < .005

N=Girls 17, Boys 14

Table 6

HEAD START CLASSROOM BEHAVIOR DESCRIPTION RATINGS CORRELATED WITH THIRD GRADE SCORES FOR IOWA TESTS OF BASIC SKILLS AND COGNITIVE ABILITIES TESTS

CBD Item	ITBS		CAT Verbal		CAT QUANTITATIVE		CAT NON-VERBAL	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Well Adjusted	.55***	.31	.56***	.13	.34*	.21	.53***	-.16
Gregarious & Verbally Expressive	.56***	.34	.44*	.20	.28	.43*	.47**	.40*
Considerate & Kind	.62***	.28	.46*	.34	.44*	.04	.44*	-.37
Self-Reliant & Self-Sufficient	.21	.27	-.02	.18	-.12	.45*	.14	.13
Able in Comprehension & Problem Solving	.51***	.45*	.52***	.06	.37*	.54*	.56***	.33
Attentive & Persevering	.51***	.41*	.51***	.34	.39*	.20	.45*	-.28
Conforming & Obedient	.53***	.37	.54***	.37	.42*	.09	.45*	-.27
Dependent, Wants Help Constantly	-.24	-.16	-.20	-.04	-.01	-.25	.15	-.19
Distractible & Hyperactive	-.34	-.25	-.33	-.13	-.25	-.08	-.20	.27
Belligerent & Irritable	-.44*	-.26	-.47**	-.15	-.48**	.00	-.35*	.32
Withdrawn & Solitary	-.34	-.07	-.17	-.10	-.08	-.18	-.26	-.27

*p < .05
**p < .01
***p < .005

N=Girls 25, Boys 19